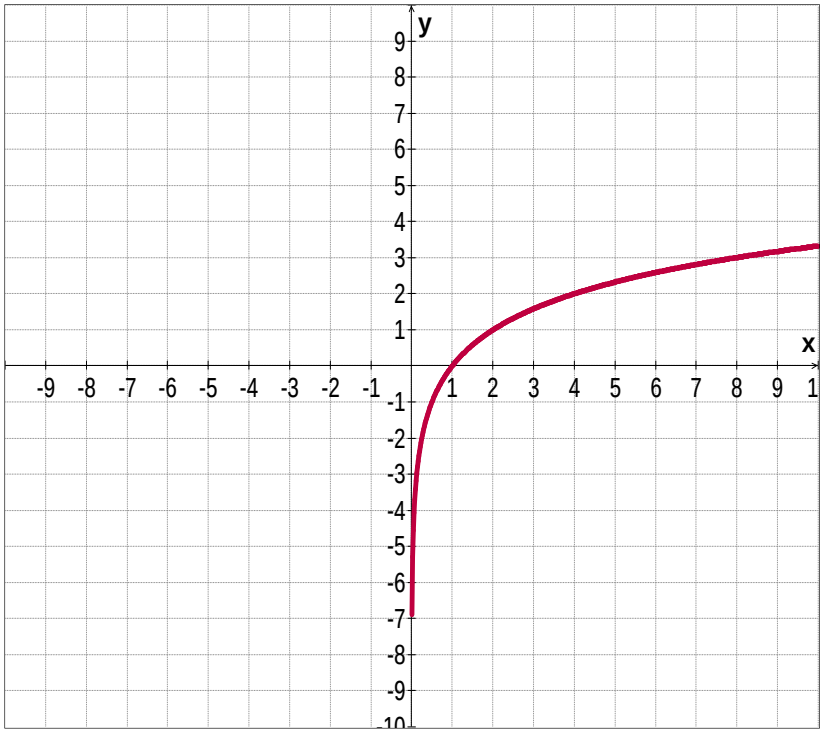
Taking a Closer Look!

Name ANSWERS

Directions: Give answers about the graph in interval notation when possible.

Graph:

$$y = \log_2(x)$$



1. Is it a function? YES

2. Domain: (0,∞)

3. Range: (-∞,∞)

4. *x*-intercept(s): $x = 1$

5. *y*-intercept(s): none

6. Symmetry: none

7. Where is the graph increasing? (0,∞)

8. Where is the graph decreasing? not

9. Where is $y < 0$? (0,1)

10. Where is $y > 0$? (1,∞)

11. Where is $y = 0$? $x = 1$

12. Find *y* when $x = 64$. 6

13. For what *x*-value(s) is $y = 12$? 4096

14. Absolute maximum value of graph:
    none - approaches ∞

15. Absolute minimum value of graph:
    none - approaches -∞

16. Asymptote(s): $x = 0$
    (state equation(s))

17. Is the inverse of this graph a function?
    Yes

18. What "type" of graph is the inverse?
    exponential

19. Assuming $y = f(x)$:
    as $x \to +\infty$, $f(x) \to$ __+∞____

    as $x \to 0$ from the right, $f(x) \to$ __-∞____

20. Name given to this graph:
    Logarithmic